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ABSTRACT

This document is a report on the proceedings of a 1-day conference organized by the Further Education Unit in England on behalf of the Enterprise and Education Unit of the Department of Trade and Industry (DTI). The following presentations are summarized in the report: "A Welcome"--getting industry and further education (FE) together to demonstrate the capability of the FE sector to meet industry's needs into the 1990s (Martin Stanley); "Setting the Scene"--a look at how the training scene has changed since the 1970s (John Peake); "The Enterprise Challenge" and the role of the DTI (Eric Forth); "Further Education Working for Local Prosperity," with an examination of the ways in which one college has met the challenges of the 1980s (John Shore); "An Industrial View" of the industry/FE relationship (Stuart Northcott); and "The Way Ahead"--a consideration of how individuals, companies, and the country can make the most of the FE system (Geoff Stanton). Discussion issues summarized in the report concern companies and training, technician training, the invisibility of FE, and coordinated planning. (KC)

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# Further Education Promoting Enterprise

Proceedings of a conference held by
the Department of Trade and Industry
and the Further Education Unit

**Edited by:**
William Bolton (FEU Consultant)
Albert Clyde (FEU Development Officer)

# Foreword

This is a report on the proceedings of a conference organised by FEU on behalf of the Enterprise and Education Unit of the DTI, the culmination of a series of joint initiatives between the two organisations.*

Details of the various DTI schemes were given at the conference by Eric Forth, the Parliamentary Under Secretary of State for Industry and Consumer Affairs at DTI. He explained how DTI had sought to stimulate increasing partnership opportunities between employers and FE, based on the belief that these key sectors working together in mutual understanding would be a basis for increased local prosperity and regional and national economic advantage.

Other speakers stated that, more than ever, we need to raise training performance, promulgate the entire question of training/retraining for life, and motivate and focus individuals on careers — adults as well as young people — since seven out of ten employees in the year 2000 are in the workforce now.

There are four main areas in which effective liaison between FE colleges and industry/commerce should exist:

- provision of broad-based and relevant VET for recruits;
- flexible provision of 'bespoke' programmes for the retraining and updating of existing employees;
- increased representation of employer interests on college governing bodies and other education advisory groups;
- identification of standards of competence for given occupations.

The 1988 Education Reform Act has given FE colleges more freedom of action and should strengthen their ability to identify and respond to the needs of industry/commerce. This, together with the DTI initiatives, puts them in a better position to take part in Kenneth Baker's campaign for action on the FE curriculum, image and organisation. FE colleges should also be able to play an influential role in the establishment of Norman Fowler's Training and Enterprise Councils (TECs).

The time for pump-priming has ended. It is our view at FEU that colleges should be proactive and must seize the opportunities before them — go to industry, work with them to identify their training problems, and design and deliver packages which solve those problems.

We would express our thanks to those who took part in the conference or assisted with its organisation, and to Bill Bolton who undertook the initial drafting of the report.

FEU would like to hear of other cases where effective college/industry links have been established.

**Albert Clyde**
**Development Officer, FEU**

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* Reported in:

- *Who Needs IT?* (FEU/DTI, 1987);
- *Extending College/Industry Links for New Technology Training* (FEU, 1989);
- *Industry Needs — YOU!* (FEU, 1989);
- *CNC Machine Tools in FE Scheme* (DTI, 1983-5), summary of FEU evaluation in *FEU Technology Digest*, No. 2 (FEU, 1989).

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## Key issues

- Investment in training is essential if individual companies and the UK as a whole are to be economically successful in the increasingly competitive, changing technological modern world. Training performance in this country needs to be improved.

- The further education system is a vital resource for the training, and retraining, of the workforce. However, it needs to market its capabilities more effectively.

- Companies and colleges must adjust to situations that are, and will continue to be, constantly changing. There are no fixed goals.

- Colleges and companies must and can work together to develop training that is relevant to the needs of companies and their employees. Not only do colleges have to make companies aware of what services they can offer, but companies need to make colleges aware of what they need.

- In considering the needs of companies, particular attention needs to be directed to the smaller ones, these being a large and vital ingredient in the economy of this country.

- Demographic, social and economic changes will pose challenges which need to, and can be, overcome by companies and colleges working together.

- The importance of lifelong continuous education and training has to be recognised by all.

# The conference

In November 1988, the Further Education Unit (FEU) and the Department of Trade and Industry (DTI) organised a one-day conference for industrialists, training organisations, senior further education (FE) college staff and FE examining/validating/research bodies. Some 240 people attended.

Format:

- **A welcome** by Martin Stanley, Head of the Enterprise and Education Unit, DTI. The purpose of the conference was outlined as getting industry and FE together to demonstrate the capability of the FE sector to meet industry's needs into the 1990s.

- **Setting the scene** — a look at how the training scene has changed since the 1970s, by John Peake, Chair of the Confederation of British Industries (CBI) Education and Training Committee and former Chairman of Baker Perkins plc.

- **The enterprise challenge** and the role of the DTI, by Eric Forth MP, Parliamentary Under Secretary for Industry and Consumer Affairs.

- **Further education working for local prosperity,** with an examination of the ways in which one college has met the challenges of the 1980s, by John Shore, Head of External Relations Unit, Salford College of Technology.

- **An industrial view** of the industry/FE relationship, by Stuart Northcott, Training Manager, AVDEL Systems Ltd.

- **The way ahead** — a consideration of how individuals, companies and the country can make the most of the FE system, by Geoff Stanton, Chief Officer, FEU.

- **Discussions** of issues arising during the conference. In addition, there was a long period over lunch when employers and college staff exchanged views and information. This was intended to be an opportunity for the FE sector to show its potential to industry and commerce, and for industry and commerce to find out about the FE sector.

# Setting the scene

The scene for the conference was set by John Peake (Chairman, CBI Education and Training Committee, former Chairman, Baker Perkins plc), who chaired the conference. It was aimed at highlighting partnerships between FE and employers in times of rapidly changing skills, and exploring ways in which the lessons learnt can be more widely spread and developed.

Based on his engineering experience and recent involvements with FE and training, John Peake set the scene for the proceedings by reflecting on the past industry and education/training scenario, with the view of demonstrating the progress that has been made and the momentum built up.

**The old scenario**

By about 1985, industry had begun to recover from the effects of a tough early 1980s. In the engineering industry there had been particularly large reductions in the numbers of people employed. Nationally, unemployment was very high. Industry was recovering but was not yet back to adequate profitability. There was still a long way to go if it hoped to maintain its position in increasingly competitive international markets. Its image in the community was fairly low as training had been squeezed in the fight for survival. It was a time of complaints.

Industry was complaining about education:

- Too many people leaving school were illiterate, were not even basically numerate, had inadequate personal development and were ill-prepared for the world of work.
- The whole idea of the need for continuing education was seen as being crushed in the years at school.
- The best young people were not going into industry, particularly manufacturing industry.
- Current qualifications lacked status and were seen as not being an adequate guide to what people could do, and that concerned industrialists.
- The educational system was criticized for providing a recipe for failure for young people. Students were pushed up the academic ladder until they failed, when they might have been better off making an earlier move into a vocation. This could have increased their motivation and, most importantly, avoided switching them off education in later life.
- Vocational education was seen as being quite separate from academic education, and second class at that.
- Colleges were seen as not meeting the needs of industry, being too inflexible and out of date. College activities were not seen as being relevant to industry.

On the other hand, colleges were short of modern, expensive equipment — particularly in computing and machine tools. They received little help and guidance from industry. There were elements of a tribal system, each college staying aloof, doing its own thing, not bothering to explain itself to others, and happy to criticize but resenting criticism.

The above is probably an over-simplification, not giving credit to all the colleges and companies that, even at that

time, had a fine record of working very well together. However, it should be seen as a base picture from which the progress that has been made in recent years can be judged.

**Progress in recent years**

Since 1985 there have been many initiatives. For example, in education:

- The General Certificate of Secondary Education (GCSE) is now in place.
- There are core curricula.
- The Technical and Vocational Education Initiative (TVEI) has gone through the pilot stage and is being extended throughout the country.
- The Certificate of Pre-Vocational Education (CPVE) has been developed and is running.

These initiatives prepare people for the world of work and for learning as a way of life. There is less emphasis on examinations and more on continuous assessment of 'what you can do' as much as 'what you know'. There are now requirements for industrial involvement through work experience in such initiatives as Young Enterprise, Project Trident, and the work of the Science and Technology Regional Organisation, the Engineering Council and their Young Engineers Clubs, and many activities of professional bodies. While some of these have been operating for a number of years, the important aspect is that the momentum is growing. They are all directed towards bringing industry and education closer together. Further impetus has been given by Industry Year, which has now moved on to Industry Matters, school governors drawn from industry and, more recently, a CBI task force devoting a lot of resources to developing school links with industry.

A similar development is occurring in further education. There has been a significant review of vocational qualifications and the National Council for Vocational Qualifications (NCVQ) has been set up. There is a greater emphasis on competence and not just theoretical knowledge. The CBI and Chambers of Commerce have been working together with the Training Agency to set up Local Employer Networks, there now being over 100 throughout the country. There have been initiatives like the Responsive College project; Business and Technician Education Council (BTEC) has continued to develop its course requirements and become more responsive in dealing with its range of courses; there is a greater industrial input through industrial governors in colleges; etc. The list goes on and on.

**The new scenario**

In assessing where we are now, there is no doubt that progress has been immense and momentum is building up. The CBI is interested in fostering careership, which means developing careers through personal action plans, starting early in life. These are seen as being based on continuous assessment of achievement and competence. There is, however, still a long way to go.

For a long time it was widely believed that employers spent far too little on training; the official estimate for 1987 was five to six billion pounds. However, more recent research by the Training Agency indicates that the figure for 1986-7 should be about 16 billion pounds. These figures do not mean that employers should relax, but that they need to ensure value for money from the existing system. The same research also showed that:

- 1 in 2 employees received no training;
- 1 in 5 companies conducted no training at all;
- 1 in 3 middle managers are never trained;
- 9 in 10 large companies do not train their senior managers.

This performance compares very poorly with that of our international competitors. Training is very high on the agenda of many companies, the CBI and the government. The profile of vocational education/training has been raised, the centre of gravity of the educational system having moved towards the world of work. But there is still much to do.

**Marketing FE**

There is still room for improvement in the marketing of the FE service. The problem may not only be what can be done in FE but whether the community knows of the possibilities. For instance, do people in the community know that FE:

- works for over three million learners;
- works for thousands of firms and organisations throughout the country;
- has 64,000 full-time specialist teachers in 400 colleges and adult and community centres;
- offers a range of 1400 qualifications.

**Where do we go now?**

Where do we go from here? It is much more than saying we want more of the same, to consolidate what is going on, to do a bit of pruning, and to press on. The next few years are going to be very different from those past, with fresh challenges. We have a much more profitable and confident industry, but its rapidly changing needs cause skill shortages through skill mismatches. There will be a greater need for skilled people.

The demographic fall of about a quarter in the number of young people coming on to the employment market by 1994 will lead to wage increases, the pressure to go into jobs that pay a bit more and not get early training such as through the Youth Training Scheme (YTS). More than ever, we need to raise training performance and promulgate the question of training for life and the need to motivate and focus individuals on careers. We are talking about adults as well as young people — seven out of ten employees in the year 2000 are in the workforce now. All this is happening at a time when colleges are acquiring an increasing degree of independence and having to operate on more businesslike terms. In running these complex businesses they will need partners in industry, and industry will need the partnerships too.

In conclusion, we have come a long way but there is still a long way to go. We need to build on the good work that has already been done by companies, colleges and the government through the DES, Training Agency and DTI.

# The enterprise challenge

The issue of the FE/employer partnership was taken up by Eric Forth, MP (Parliamentary Under Secretary of State for Industry and Consumer Affairs), who outlined the role DTI played in promoting the partnership.

### The DTI CAD initiative

In parallel with this conference, over 200 colleges are mounting open days for their local industry. These events are centred on computer aided design (CAD) and intended to promote the greater use of new technology by all employers, in both industry and commerce. This is the result of a recent DTI scheme, costing about 2.5 million pounds, under which colleges were provided with the latest CAD equipment to enable them to meet the rapidly increasing needs of their local employers for new technology training. Although only introduced some nine months ago, there has already been an overwhelming and encouraging take up of training and the scheme is undoubtedly successful.

### The DTI CNC initiative

DTI has been associated with a number of support schemes for FE over recent years. The first major one was in 1983, when an initiative was introduced supporting the use of Computer Numeric Control (CNC) machine tools in colleges. Ten million pounds worth of equipment was distributed between 339 colleges; DTI paid 50% of the cost. Almost every FE engineering department was brought up to date, with equipment of the standard being used in the engineering industry. This initiative allowed colleges to provide courses to meet the needs of their engineering employers, in turn ensuring that their employees would be brought up to date in the usage and exploitation of new technology — a vital need for a trading nation such as ours, especially when faced with increasing competition from overseas. This initiative was also an overwhelming success.

### The one-third scheme

Following close behind came a series of skill shortage reports produced by John Butcher. His second report, relating to technicians, highlighted the opportunities for using FE in all areas of skills updating. One of the major recommendations was that the central government, FE colleges and employers should form a triple alliance to ensure that the availability of vital skills training matched the demands of the nation.

To facilitate this DTI introduced a scheme under which it provided one third the cost of new training programmes designed to update both industry and commerce. Virtually the only criterion was that colleges should obtain a third of the cost from employers, with the remaining third coming from the local authority. This may seem a rather simple task, but in achieving it colleges had to become fully attuned to the needs of their local community. At first colleges were a little uneasy about approaching industry, but it soon became apparent to all that there would be no losers in this process. What was the point of individual employers duplicating each other's efforts when, by collaborating with their local college, they could share the cost of training and increase the size and quality of the pool of skilled labour. There was even a chance that their action would lead to a reduction of the poaching of staff from each other and perhaps reduce the wages spiral. All sectors of the economy

have benefited from this scheme. As might have been expected, the major activity has been within the engineering sector, but support has also been provided to areas such as textiles, footwear, furniture, the motor industry, tourism, and even to a college involved in helping pig farmers in Suffolk. As with the CNC machine tools scheme, this one-third contribution scheme has proved a great success. For an outlay of some 3.5 million pounds by the department, there has been an additional funding of some 10 million pounds by industry and local authorities. Thus the original one-third contribution has been massively built upon, an obvious indicator of the value private enterprise employers place on their new-look FE colleges. DTI is proud to have acted in such a catalytic role.

**Responsive colleges**

FE colleges are well placed to respond to the needs of local employers. They understand well the fluctuations of various sectors of industry. After all, most of the colleges have been there in one form or other since mid-Victorian times. Partnerships are not new, but they need to be re-encouraged and reinvigorated. However, to be able to respond to local needs, it is imperative that they receive close support from employers. Though cash is always gratefully received, colleges benefit from being kept informed about industry's plans for the future and the impact these may have on training. We have striven to achieve a situation where FE copes with the needs of employers, in some cases even anticipates them. In turn, colleges can often provide consultancy advice to businesses. We must not let the position slip. There can be no better way of ensuring the future quality of craftsmen and technicians alike than continuing to build on the enterprise resulting from the initiatives outlined above.

**The challenge**

There will be a growing shortage of school-leavers and, as 1992 approaches, a need to get the best from all employees, no matter what their age and background. We must ensure that everyone has the opportunity to develop their skills to the absolute maximum. DTI has given a good start to the system in establishing greater partnerships and enterprise between employers and FE. It is now up to employers and colleges to carry it forward and see that it continues to flourish. DTI will remain in the background, ready to help, but the future is up to the companies and colleges. I hope there can be no doubt of the importance the government is giving to this area of activity as there are few areas of greater importance than bringing together the worlds of education and of business and wealth creation. Only by the close co-operation of these two vital parts of our community can we have the best possible chance as a trading nation in an ever more competitive world.

# FE working for local prosperity

John Shore, Head of External Relations at Salford College of Technology, introduced the FE view through a consideration of the enterprise achieved in Salford. Salford city can be described as the industrial centre of the area, with its neighbour, Manchester, the commercial centre. It has a population of about a quarter of a million, with 20% unemployment (The area lost a large number of manufacturing jobs in the 1970s.). It is linked with Trafford Park, at one time the largest industrial park in Europe. More recently, there has been the Salford Quays initiative, the Trafford Park enterprise zones, and business parks. Economic regeneration of the area is occurring. The job of the college is seen as keeping up with this regeneration and aiding it.

**Salford College**

Salford College of Technology is one of the oldest in the country, having been founded about 1896. It started as the Pendleton Mechanics Institute and the Salford Working Mens College to look after the needs of working people and skilled people in industry, and to aid industry in its development. It has grown since then, with the university at Salford and more recently another FE college developing from it. All three establishments are fighting the same battle — against the depression that hit Salford in the 1970s. The college has about 4000 students — about 2000 advanced FE and 2000 non-advanced — with a range of courses from YTS to postgraduate work.

A major change took place in the early 1980s. Local industry had been mainly based on heavy engineering. The college was one of the largest in the North West for traditional mechanical and production engineering and textiles engineering, and well equipped for these. Through the combined efforts of the college principal and the leader of the council, the college has been re-equipped to meet the new technological training needs of local industry.

**The External Relations Unit**

The college has a centralised External Relations Unit (ERU) with the functions of:

- linking with industry and co-ordinating such activities for the entire college;
- linking with city services such as the Economic Development Unit, planning, recreation, cultural services, treasurer's department, the City Administration, the personnel department, councillors;
- linking with public bodies, e.g. Training Agency, DTI;
- organising full-cost courses;
- undertaking consultancy;
- managing externally funded projects;
- recruiting and supporting foreign students;
- marketing college activities.

As an illustration of its work, the ERU worked with the City of Salford Personnel Department to train local people for the hotel industry, in preparation for new hotels being built in the Salford Quays project and Manchester. Working with the Economic Development Unit means that

when a new factory is being built or a new company comes to the city, the college is informed and can discuss and plan training with the new employers before they move in. The college works very closely with the City Administration, for example developing European Social Fund activities. Recently the ESF awarded a contract to investigate the 'quality of life' in the inner city and make appropriate recommendations for its improvement.

**Training for Cussons UK Ltd**

Cussons UK Ltd, the soap manufacturer, is one of the leading producers of soap in the United Kingdom. Production problems developed in the 1970s and it had to reorganise. The workforce of 500-600 dropped to about 200 by the 1980s. The number of craftsmen dropped to about one third and these had a poor skills mix. There were too many mechanical engineers and too few electrical engineers. The jobs and conditions had changed with the reorganisation of the company and there was low morale within the workforce. There was a need to broaden and update skills, develop team work, and set up a pro-active approach to maintenance. However, no craft training had taken place in the company for 20 years. The craftsmen thought of college as being like school and were apprehensive. A working party was set up, with directors, managers, trade union and workforce representatives, and college staff, and developed plans for training. Some workers visited the college to meet and talk with college staff and found that many belonged to the same unions as they did. It was decided to conduct training at the college as it was able, experienced, flexible, keen and had union compatibility.

The programme developed for Cussons included skill assessment, skill enhancement, some formal training in their own subjects, some cross-trade training, and a team-building weekend. The latter part of the programme raised some apprehension in the company, initially, as to how their workforce would react to a period in a hotel. It did, however, go ahead and the programme proved to be of great benefit. Games involving communication skills and problem solving were played, and by the end the workforce made a team rather than a group of individuals.

Some of the outcomes of the training were:

- improved skills;
- improved industrial relations;
- a measurable improvement in line performance;
- the workforce working as a team;
- a pro-active maintenance programme;
- a computer-aided fault-reporting service;
- increased pay for increased performance;
- a more ready acceptance of training in the company.

**Assisting companies**

Other achievements of the college in aiding local economic development include:

- A company about to move into the area employed 20 people ahead of opening its factory and sent them to the college for training, including team-building programmes.
- A problem experienced by many medium-sized companies when they grow to about 120 to 150 employees is that of management in relation to recruitment, selection, retaining staff, etc. The college provides management training for such companies.
- The college runs the Salford Business Club for small companies, the current membership being about 150.
- The college, with three others and 30 major food producing companies, runs the North-West Food Technology Consortium.
- The college is working on Training Agency and local authority initiatives for the unemployed.
- The college is working with the city on integrated programmes, e.g. the 'quality of life in inner city' project referred to earlier.

● With the aid of the DTI one-third scheme, the college has modernised its bakery plant since it was a major provider of training to the bakery industry. DTI funds of £30,000 acted as the trigger which led, with the aid of funds from industry, short-course profits, sale of the old plant, supplier discounts, and funds from the LEA, to a total of £120,000 being obtained for new equipment.

● The Salford Advanced Manufacturing Technology Awareness Consortium (SAMTAC) has been supported by DTI, both nationally and locally. It has now gone beyond the 'awareness' to a 'doing' stage. The college staff act as consultants, identifying problems within industry which are solved using college equipment. It is 'hands-on' consultancy rather than a paper exercise, and small companies appear to appreciate this.

**What now?**

The following are some very relevant quotations:

*Employers are now in the driving seat with training.*

(Lord Young, NVQ)

*major skills gap between the UK and Japan/USA/West Germany*

(N Fowler and B Nicholson)

*If we don't bridge the skills gap — industry dies.*

(John Banham, CBI)

The term 'enterprise' is frequently used in connection with training; indeed it is part of the title of this conference. According to the *Oxford Dictionary*, enterprise means 'readiness to engage in'. Colleges are now ready and want to engage in training to assist companies overcome these problems. Are companies ready and able to join with colleges and engage in training?

# An industrial view

An industrial view of the ways by which employer-college relationships can change was given by Stuart Northcott (Training Manager for AVDEL Systems Ltd.):

*They have difficulty in bringing their reason to act and on all occasions use their memory first. As soon as they have got rid of some grievance and decided on the best practice, they make haste to fix it as a finality and never wish to hear of alterations anymore. Their mind is in a state of arrested development. There is a drag of inertia which resists reform in every shape.*

Those words are from Ralph Waldo Emerson, who visited this country twice, in 1833 and 1847:

*It is the mental inertia which prevents the English from comprehending the world about him. He still looks on American competition as an accident. He still regards his railways as the best. He is still pleased with the results attained at his universities. He is satisfied with the place he holds. He does not care to change. He fails to perceive that beyond the boundaries of Great Britain the methods of organisation and administration have altered throughout the world.*

That was written in about 1900. Both quotations gave a depressing view of this country.

Recently newspapers have given an indication that we are getting better. While that is probably right, the essential point is that we have to sustain that growth. As a nation we are a little bit inclined to relax when we are beginning to get things underway. We need to do better. A recent editorial in the *Production Engineer*, referring to some research by the Organisation for Economic Co-operation and Development, stated that newly industrialised countries (NICs) like Taiwan, South Korea, Singapore and Brazil used economic practices such as lower wages and cheap, plentiful labour to improve their relative position in world terms. But now a second wave of NICs are beginning to show themselves — Indonesia, Thailand and China. However, there should be no need for protectionist measures because there will be a balanced flow of trade between these three levels of countries, provided long-established economic powers continue to expand ahead of the new wave of NICs. This means improving efficiency and taking on new technology.

John Naisbitt, in his book *Megatrends* (1982), argues that economic strength is not built or destroyed in a few years of sharply fluctuating percentage points; it is the steady cumulative effect that matters.

The United Kingdom, by growing just one percent less than France, Germany and the United States, managed in a couple of generations to transform itself from the wealthiest society on Earth to a relatively poor member of the Common Market.

**AVDEL Systems' experience of FE**

Some years ago, the contact between AVDEL and the local De Havilland College consisted of sending apprentices on day-release courses. A cosy relationship had developed, both among the company training staff and in the college. The company would recruit school-leavers without specifying the type of apprenticeship they would serve. They were then sent to the college to enrol and

became technicians or craftspeople, depending on which course the college thought them suitable for or had low numbers in. Eventually, a point was reached where questions had to be asked and the state of affairs changed.

At the time the college changed its principal. Also, the company was considering the future of its internal training centre which had been established for apprentice training, although some works training had been carried out. It was a vast building containing a lot of machinery, some of which was getting out of date. Training staff were also getting out of date and there were fewer apprentices. It was quite clear that something had to be done. It was decided to shut the training centre and conduct first-stage training at the college. The company gained a number of benefits:

- The role of training staff could be changed from instructors to training advisers/training officers who were able to assist and advise managers on not just apprentice training but the full remit from management training to operative training.

- The company got better value from the same number of training staff.

- It made better use of floor space, now being used for productive effort.

- Some of the machines from the training centre could be used for productive effort and some for training later in the apprenticeship.

The college was equipped with modern machinery, and its staff could cover a number of skills. However, company training staff had to spend a lot of time in the college initially. The college had to clarify the company view on tasks and standards, and values and needs. FE staff also came to the company, and still do. Progress in the identification and solution of problems can be made more rapidly.

**A software engineering course**

The college had also been active with GEC Avionics (now Marconi Defence Systems) in developing a software engineering course. The company had difficulty recruiting software engineers who, at the time, were seen to be at graduate level. A partial solution to the problem was to educate some trainees to HNC level in software engineering. The difficulty was locating the training. De Havilland College, near the company, could develop such a course, but the LEA wished to site it in a different college some distance away. After a long debate the LEA agreed to locate it in De Havilland College. An approach to BTEC indicated that a submission, if successful, would mean starting in a year, in September. GEC, however, wanted to start the next September, i.e. in two months' time. It is a credit to all concerned that the course was got off the ground in this short time span and is a tremendous success. The issue it raises, however, is that of the lead time taken to get courses off the ground.

**The circle of developments**

Numerous other companies have been involved in a circle of developments, with the college at the hub. The DTI, with their initiatives, lit the blue touchpaper for many of them. The list of developments includes:

- an automation systems centre with the latest robotics and CNC machine tools;

- a new CAD suite, a short-notice short-course facility with all the latest hardware and software for industry;

- an automated cartography workshop;

- the latest 32 bit CAD technology.

Two initiatives that AVDEL Systems have been involved in are:

- Advanced Manufacturing Technology (AMT) awareness, the college and a number of companies putting together a number of seminars and packages to aid industry, particularly smaller companies. From this initial work came an AMT user group. The response from companies already involved in AMT was good, but some of the smaller companies did not become involved as they were too concerned with present issues to worry about the future. They hadn't got time — this is a major issue which needs to be overcome.

● A local collaborative project, involving a number of companies. Training using existing course material had already taken place and pilot courses in new areas were being designed.

**The demographic trend**

No conference on training and FE can be complete without a mention of demographic trends. We seem to be at the stage of coming up with instant solutions — there is no need to worry because we will get the youngsters out from school by making first training packages more attractive; forget about the youngsters and bring in the 'old ones' by extending the retirement age; go for automation and have no need for people. But, really, more careful thought is required. Automation may be all right in the long term, but we have to get there first.

John Naisbitt, in his book *Megatrends*, argues that in the United States they are moving from an industrial society to one based on the creation and distribution of information. He is not, however, suggesting that industry as we know it will disappear — did farming end when the industrial revolution occurred? In the agricultural era, 90% of the population produced 100% of the food; now 3% produce 120% of the food. He also mentions that a 1980 report by the US Department of Education and the National Sciences Foundation stated that 'most Americans are moving towards virtual scientific and technological illiteracy.'

**Changes for this country**

If this country is going to compete with the best and the brightest, we have got to change our class-ridden attitudes to training and education. Why the difference anyway? Is training somehow inferior to education? Even within the field of education there are more divisions of status. It is time to ask the question — has our desire to label things for administrative purposes stunted our growth and pickled our thinking? Isn't it time for us to shake off these constraints of the mind and get to grips with the fact that we need continuous improvement and development of people if this country is to succeed over a long period of time? We must adjust to the idea of the college as a learning resource. It is a business; if you are a ratepayer you already have shares in it and if you are a shareholder you ought to be doing something about influencing what that business does.

**Quality**

In any successful business there has to be a drive for total quality. As a company, AVDEL had learnt much about quality from selling to the British car industry and Japan. Ford have laid down certain criteria for suppliers. If these are met, a company can be registered as a preferred supplier and a relationship is established. Then they come back the next year and we find the goalposts have been moved as a result of continuous improvement in action. If a company is to remain a preferred supplier then it has to keep solving problems and getting better and better and better and . . . What we, as a company, are now doing is going to our suppliers and saying the same thing. There is no reason why the company shouldn't go to the college, because they are a supplier, and audit their operations. If they meet the company criteria, a relationship could be constructed on the basis of the college becoming a preferred supplier. Then the next year the company will move the goalposts and expect improvements.

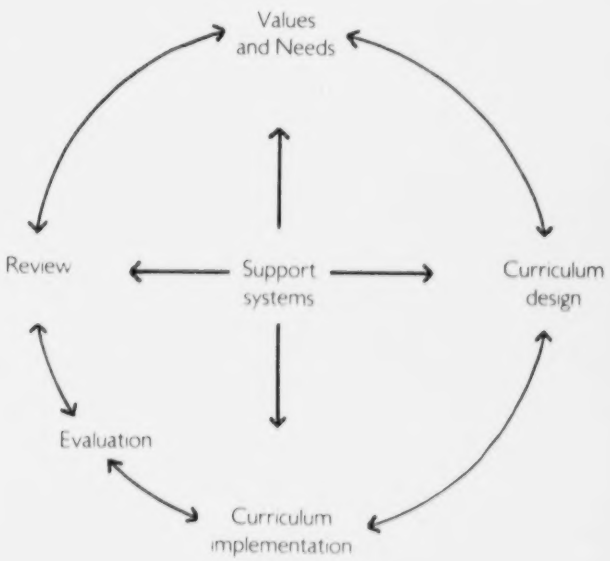


Figure 1 The quality circle for curriculum development

Figure 1 shows the quality circle for college-company curriculum development. It starts with values and needs, requiring the company and college to get together and make sure that these are defined as precisely as possible. If these are not right then the rest will not be right. In curriculum design, it is essential that the teaching staff know what is involved and why things are in the curriculum. Underlying this are attitudes which have to be right. Curriculum implementation concerns not only what is delivered, but how. It should be participative. Evaluation means asking company, college staff and students. This then leads to review, which completes the circle by considering again the values and needs.

The new reforms are stirring things up. College governing bodies need to become more involved with policies and directions within the college, not just represent views of sectors of the community. Colleges have to become businesses — a learning resource for the community, not just for 16- to 19-year-olds. Continuous development is needed as technology is changing so rapidly. Industrialists must get into colleges because they are shareholders and because it is necessary to broaden thinking within the FE sector.

# The way ahead

Geoff Stanton (Chief Officer, Further Education Unit), in considering the way ahead, saw a prime issue:

- How can we make the most of FE as a resource — as individuals, as companies and for the national economy and interest?

Positive factors are that the FE sector can be:

- flexible in a way the school sector can never be because of its custodial function, being compulsory, with fixed hours, and heavily constrained in a number of ways;

- client centred in a way that is probably not possible with higher education because, in the British culture, it has to have a certain stance, a certain approach to the world, a certain level of operation.

We also need to consider the problem of the invisibility of the FE sector to:

- companies;

- the community;

- teaching staff in FE who may not themselves recognise the range of what is available within the FE system.

People are beginning to see, because of the demographic trends and other developments, what the needs are, but they do not recognise that the FE system is, perhaps, the fundamental resource which will enable us to meet them. Unless the FE infrastructure is used — the 400 colleges and thousands of vocationally experienced staff — we cannot deal with the needs. There is a mutual interest in seeing that everyone is aware of the existence of the sector and its potential.

**Contextual changes**
Changes to the contexts in which FE operates will occur as a result of:

- *Demographic changes* While the number of 16-year-olds is dropping, it must not be forgotten that the bulge in the population is still with us, in their late 20s. For many colleges, therefore, the audience is still there, but they are not all 16-year-olds requiring education at 9 o'clock on a Monday morning or able to start in September.

- *Economic changes* The industries active in the now recovering situation are not the ones that were declining and are often not those that had the same instinctive links with colleges or attitudes to training.

- *Social changes* The social class breakdown of the demographic trend merits consideration. Between 1980 and 1993, social classes 1 and 2 are increasing by 8-10%, whereas school-leavers from social classes 4 and 5 are declining by over 50%. Social classes are derived basically from occupational criteria and so the above data states something about changes in occupations.

Contextual changes are not only affecting the market FE has to address but also the parameters within which it operates. There are, for example, parameters imposed by the NCVQ, Training Agency and Department of Education and Science (DES). Strategic curriculum planning for FE has been heavily promoted by the Training Agency, and now the DES, and can bring many benefits, but it must not be seen as an end in itself. The test is whether it can be shown to lead to improved provision. Good plans do not necessarily imply the

existence of good practice, and good practice does not seem necessarily to be reflected in plans.

**Quality**

The quality of the provision the FE system can make is determined by all the factors indicated in Figure 1: needs and values, curriculum design, curriculum implementation, evaluation and review. You might almost argue that if needs analysis and curriculum design are done well enough, implementation almost follows of itself. If the learners have a full and complete understanding of what they are aiming for and how to recognise when they have got there, then, though they will still require facilities and tutoring, they may not require teaching in the traditional way that term. That could become very important when coping with the volume of change resulting from the demographic trends and the diversity of the economy, at the same time as colleges are being required to be more efficient.

**Needs**

Discussions with companies on needs are liable to 'go straight into the sand' if they open up with 'What course do you want?' rather than 'What problems have you got?'

One way of identifying problems is outlined in a publication of some ten years ago, *The A to Z Study* (ITRU, Cambridge). Companies were asked to describe:

- their best recent recruit;
- their worst recent recruit;
- the difference.

That difference is the training need. Interestingly, the study indicated needs that were certainly competence orientated but not very technical. Most companies claimed they could address the technical issues themselves or directly subcontract, but did not know how to tackle the need for personal effectiveness or initiative. The report used the term 'pussy footing' and defined it as the ability to learn non-destructively. Some young recruits learn all right, but leave a trail of havoc; others do not seem to realise what they have to learn and keep repeating the same mistakes.

Such a need identification clarified the next step: to consider what kind of curriculum response was required. This, then, was not a consideration of what 'courses' but of what 'learning programmes' were required. Learning programmes increasingly occupy more than one place, over an extended period of time (with gaps), and under the aegis of more than one agency. A learning programme is owned by the learner; post-16 learners will have to find their way through a variety of provisions, full- and part-time, work- and college-based, to reach their end point. The implementation in course terms in a college might be a small element of the total programme.

Linked to any consideration of learning, as opposed to teaching, is the problem that (for simplicity) the latter might be costed and measured as if it was a good proxy for the former. The tendency is to talk of staff:student ratios and staff contact hours with learners. The issue must surely be what resource is required to achieve a given amount of learning, however achieved. We must not assume that it has to be achieved by what might turn out to be rather old-fashioned means. It is also important to measure learning and not attainment. This means we have to talk about the progress people have made, not the level they have reached (in resourcing terms), and measure entry standards as well as attainment at exit.

**Competence**

FEU has been involved in a number of related projects over the years, a recent one being with the Engineering Council, on key technologies. Coming from this is the view that:

*It is essential to prepare for the future by creating an environment in which engineers, technicians and others can adapt easily and flexibly in creating competitive products.*

Key technologies are seen as having important implications in achieving this:

*Key technologies are newly emerging topics in science and engineering which are likely to have a major evolutionary effect on an existing product or process or may lead to a revolutionary new product or process.*

One of the features of a key technology is that it frequently seems to occur at the boundaries between existing specialisms and presents a problem as far as needs analysis and education/training are concerned. The danger is that we look only at the present and the immediate past when we try to define the competences required for jobs. It may even be that those jobs were specifically designed to cater to the average recruit who would lack certain competences. The job is thus not inevitably that 'shape', and better productivity might result from reshaping it.

**The pro-active college**

Although there is much talk of the need for a responsive college, a college can be pro-active and promote industrial growth in its area by providing a vocational education infrastructure. There are, for instance, colleges around which there are clusters of small studios for design and other services. The small businesses are there because the college is there, and that is where the employers and employees came from. They stayed in the area they knew, with the contacts they had, because they knew that training and retraining could be provided by the college.

**The future**

How do we look to the future? Linked with this is the issue of how to define competence; we need to define it in a way that looks to the future and does not commit us to the past. In some cases, the kind of growth the country wants cannot be achieved without a fundamental redefinition of jobs:

*It is not the robots which are the wonderful achievement but the new and wide ranging competence of our employees.*

*Competence which is primarily concerned with current job demand does not cover the whole field. It fails to respond to our view of long-term company needs and of our image of our future employees.*

These are statements made by the Volkswagen Company in Germany. They arose during a project to plan and pilot training for the future for clerical/administration employees. The company is concerned that such employees will be able to work in a team with other employees and understand the business of the company as a whole, essentially a productive process, and are looking to the future in their training programmes.

Our training must be for the future, broad based, and attractive to all concerned. Post 1992, we might have not just a single market in products but a single market in training. If our training is not 'the best' we might not be able to compete with other companies and training establishments for the diminishing cohort of trainees.

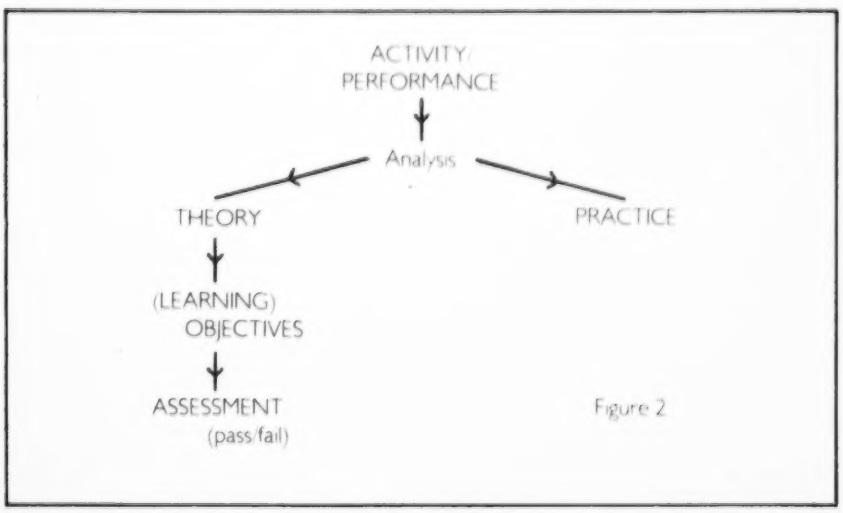


Figure 2

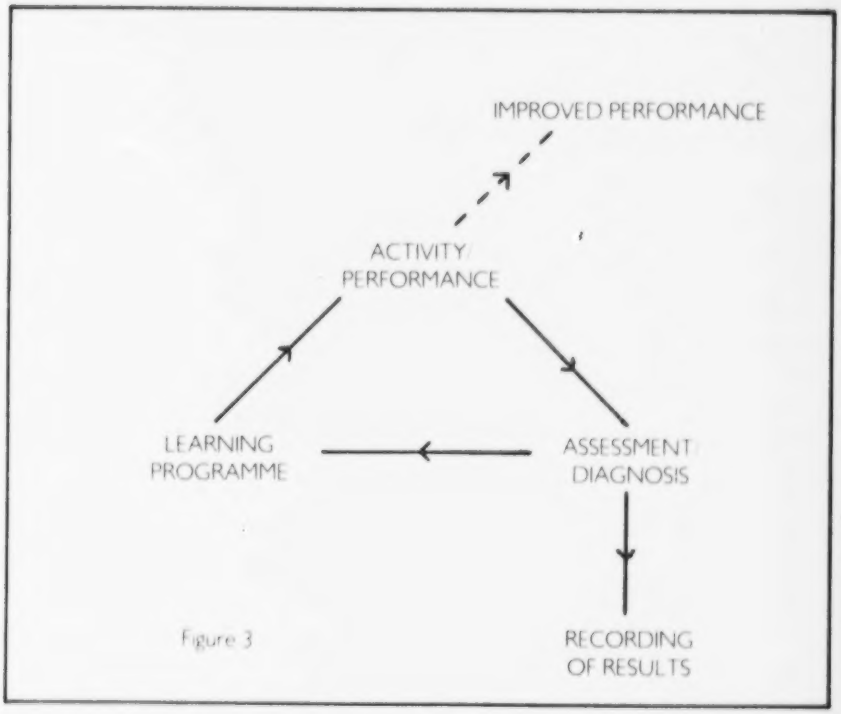


Figure 3

Finally, it is necessary to not only think of the needs of the college's corporate customers but also those of the locality. It is quite reasonable for a college to say that it has certain strengths which it is playing to and certain things it would not be cost effective to invest in and become good at. But those responsible for the locality have an obligation to ensure that their inhabitants have access to the right range of learning opportunities. This is an argument for the LEA perspective, as representing the local constituency. I mention this because, while welcoming increased employer involvement with colleges, this perspective must not be overlooked by them in their governor role.

**Vocational curriculum design**

The old model for curriculum design involved taking an activity and analysing it to define the required competence. The analysis was often divided into theory and practice with, unfortunately, the theory being for the college and the practice in the company, as in Figure 2. The theory was then analysed and learning objectives produced. These formed the basis of the course and the assessment, students being passed or failed according to their achievement of the right percentage of learning objectives. However, a connection can't always be shown between the achievement of those objectives and the competence as originally defined. Somebody could be qualified without being competent, and conversely be competent without being allowed to achieve the qualification.

- The new model would seem to be different (see Figure 3). As with the old model, it starts by considering an activity. However, it goes immediately to assessment/diagnosis. Only after this can the gap between defined competence and actual performance be established, and thus lead to the devising of an appropriate learning programme. (This seems to be the model by which colleges will have to relate to both industrial clients and individuals.) The learning programme is then implemented; the test of whether the diagnosis was correct and the programme well designed and delivered is whether or not improved performance results.

  This is a challenge to colleges since it is very likely that much of the course content held so dear will prove irrelevant to the development of competent individuals. Conversely, some neglected learning activities may turn out to be crucial. This model also describes a new relationship between college and clientele. Different companies and individuals within them will require different learning programmes, even to reach the same competence. Colleges thus have to be flexible in terms of structure and design of training.

Four areas in which effective liaison between FE colleges and industry/commerce need to exist have been referred to:

- the provision of broad-based and relevant Vocational Education and Training (VET) for recruits to industry and commerce, if those with the needed qualities are to be attracted and developed;

- the flexible provision by FE of 'bespoke' programmes for the retraining and updating of existing employers;

- the involvement of those representing employment interests on college governing bodies;

- the identification, by Industry Lead Bodies, of the standards of competence required for given occupations.

Finally, the dialogue being advocated at a local level between colleges and companies must also exist at a national level between government agencies that represent the various parties involved. Colleges and companies sometimes have a more difficult time because of a lack of the right level of coherence and liaison at national level. The FEU sees the identification and promotion of the necessary links as one of its functions.

# Discussion issues

The following are brief notes of issues raised during discussions at the conference.

**Companies and training**
Criticism was levelled at the example of AVDEL Systems in its earlier days (see Section 4) for abdicating its responsibility for training by sending employees to colleges and leaving the latter to decide what courses to put them on. This was seen as being a problem not untypical among employers, who then go on to complain about the college system not delivering the right training. Employers need to be concerned, with the college, in determining, on the basis of needs, what programmes of training are required.

There are many small companies in the engineering sector, sometimes arising from the fracture of large companies, which form a significant part of the British economy. Such companies often have a high skill base but few employees. Models of learning/training have to be adapted to their needs and must be able to utilise and build on what exists. However, small companies very often lack facilities, resources and knowledge of FE, which hinders their use of it.

Small companies were said to be a problem in that they often did not want training for employees or, more likely, did not feel they had time to consider such issues. It was suggested that colleges should go to companies, discuss their needs, and consider such solutions as training on the job. Some colleges run small business advisory services, often with very little financial support.

**Technician training**
Many government schemes seem to concentrate on large-scale industry and focus on graduates. Small companies do not employ many, if any, graduates. Not until the second Butcher report was the necessity for training for technicians realised. It was suggested that a Teaching Company scheme for graduates, funded by DTI, could be extended to the technician and technician engineer and colleges, and so benefit a much larger sector of industry.

**The invisibility of FE**
It was stated that, all too often, government departments and agencies had blind spots with regard to the FE system. The main thrust in education by the DES and DTI seems to be to schools and not FE. This comment was countered by the point being made that DTI had put a lot of money into the FE system and been catalytic in bringing industry and colleges together. It was up to the latter to consolidate. The DTI would remain on the sidelines, looking to see where and whether to intervene.

**Co-ordinated planning**
A plea was made for a coherent policy towards FE from government departments and agencies. For example, DES has been responsible for staff development programmes, the Training Agency for planning, and DTI has had some involvement with capital expenditure items. The three need to co-operate for sensible progress as there can be problems if there is no coherence.

# FURTHER EDUCATION UNIT

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## Objectives

The objects for which **The Further Education Unit (FEU)** is established are to promote, encourage and develop the efficient provision of further education in the United Kingdom and for that purpose:
a) to review and evaluate the range of existing further education curricula and programmes and to identify overlap, duplication, deficiencies and inconsistencies therein;
b) to determine priorities for action to improve the provision of further education and to make recommendations as to how such improvement can be effected;
c) to carry out studies in further education and to support investigations of and experimentation in, and the development of, further education curricula and to contribute to and assist in the evaluation of initiatives in further education;
d) to disseminate and publish information, and to assist in the dissemination and publication of information, about recommendations for and experiments and developments in further education.

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